Fig.1

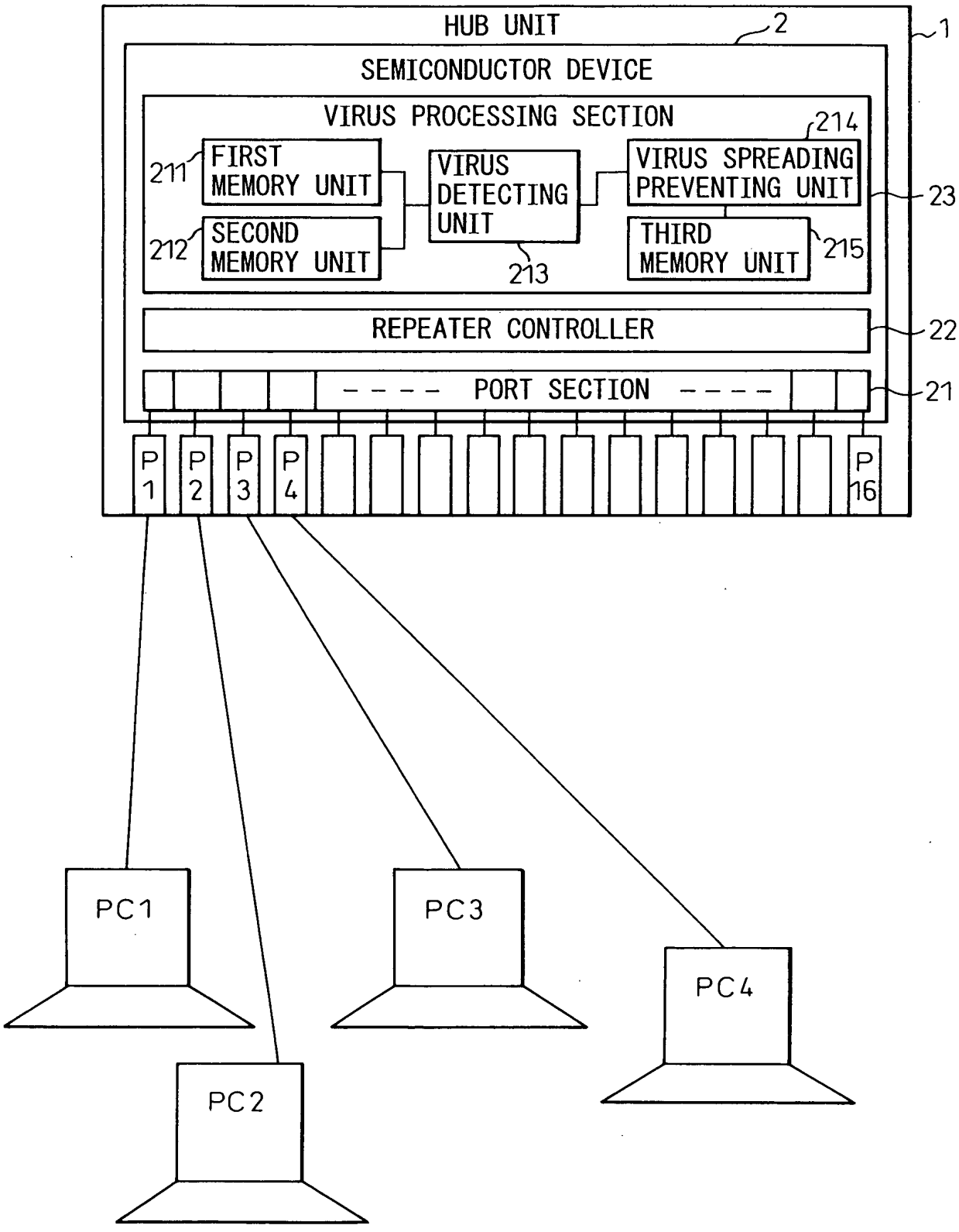

HUB UNIT
2
1
SEMICONDUCTOR DEVICE
VIRUS PROCESSING SECTION
214
211
FIRST MEMORY UNIT
VIRUS DETECTING UNIT
VIRUS SPREADING PREVENTING UNIT
23
212
SECOND MEMORY UNIT
213
THIRD MEMORY UNIT
215
REPEATER CONTROLLER
22
PORT SECTION
21
P 1
P 2
P 3
P 4
P 16
PC1
PC2
PC3
PC4

Fig. 2

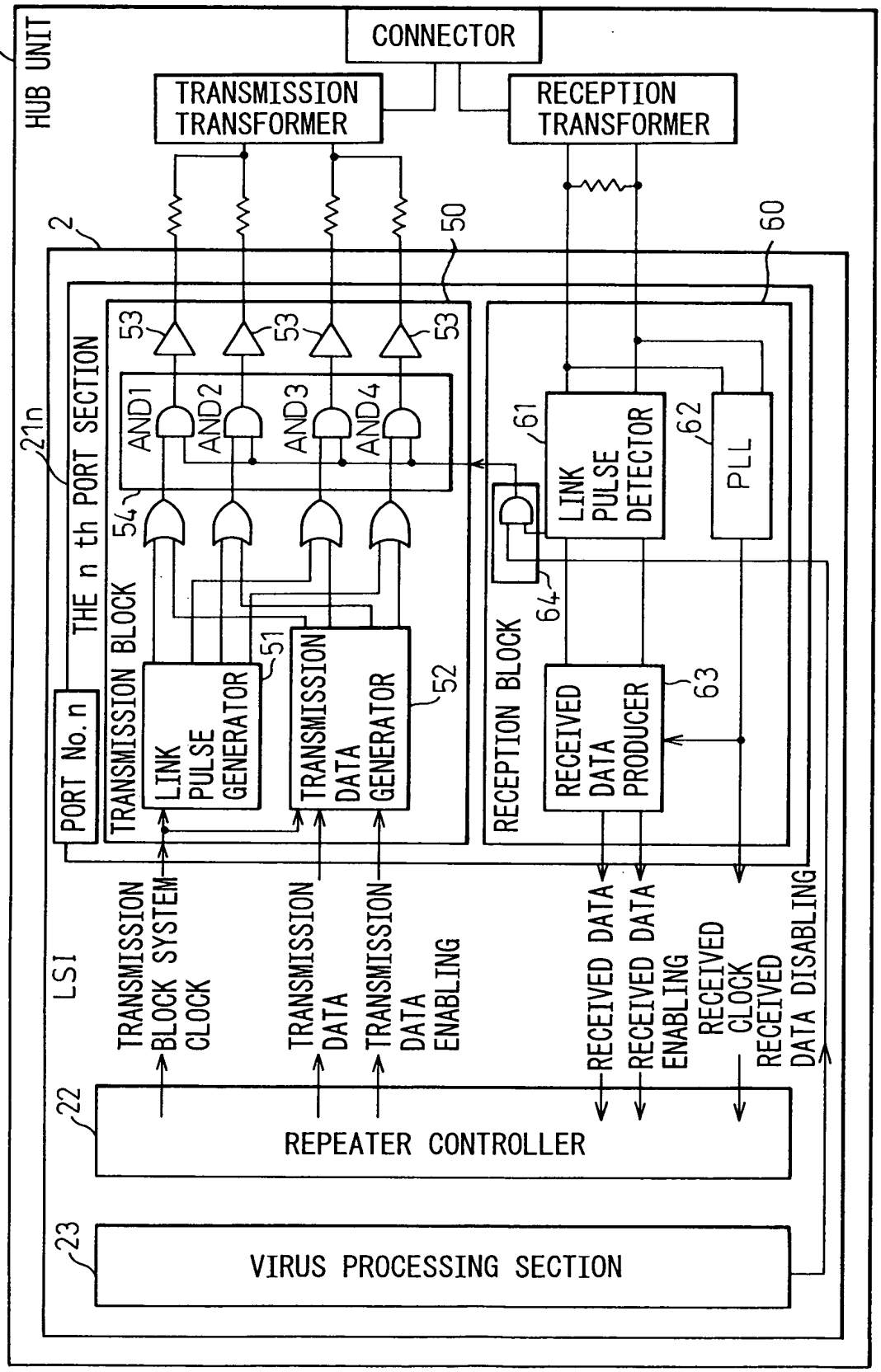

HUB UNIT
1
CONNECTOR
TRANSMISSION TRANSFORMER
RECEPTION TRANSFORMER
2
50
60
21n
THE n th PORT SECTION
53
AND1
AND2
AND3
AND4
54
61
LINK PULSE DETECTOR
62
PLL
64
PORT No. n
TRANSMISSION BLOCK
LINK PULSE GENERATOR
51
TRANSMISSION DATA GENERATOR
52
RECEPTION BLOCK
RECEIVED DATA PRODUCER
63
LSI
TRANSMISSION BLOCK SYSTEM CLOCK
TRANSMISSION DATA
TRANSMISSION DATA ENABLING
RECEIVED DATA
RECEIVED DATA ENABLING
RECEIVED CLOCK
RECEIVED DATA DISABLING
22
REPEATER CONTROLLER
23
VIRUS PROCESSING SECTION

Fig.3

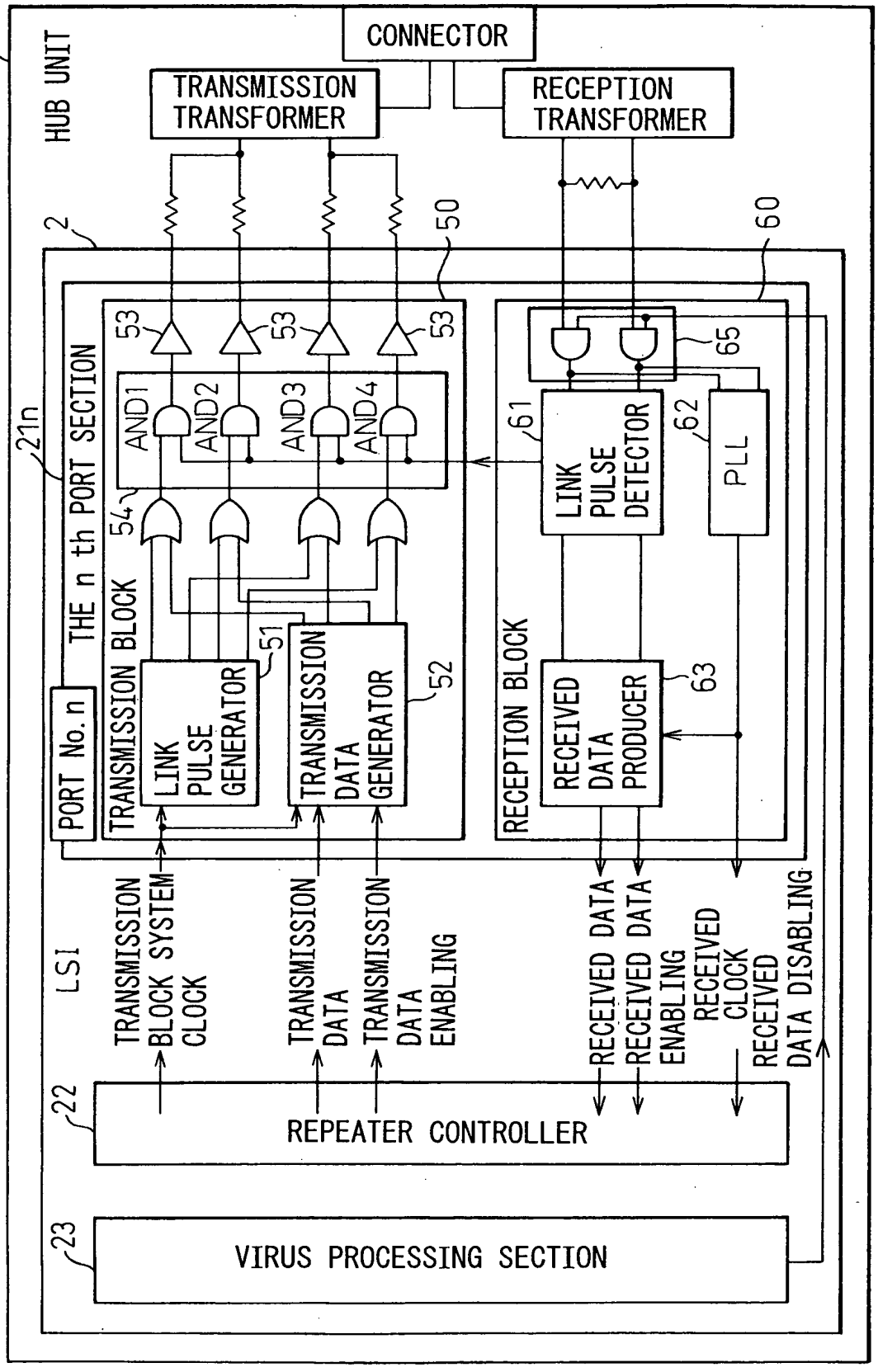

1
HUB UNIT
CONNECTOR
TRANSMISSION TRANSFORMER
RECEPTION TRANSFORMER
2
50
60
21n
THE n th PORT SECTION
PORT No. n
TRANSMISSION BLOCK
RECEPTION BLOCK
53
AND1
AND2
AND3
AND4
54
65
61
LINK PULSE DETECTOR
62
PLL
LINK PULSE GENERATOR
51
TRANSMISSION DATA GENERATOR
52
RECEIVED DATA PRODUCER
63
LSI
TRANSMISSION BLOCK SYSTEM CLOCK
TRANSMISSION DATA
TRANSMISSION DATA ENABLING
RECEIVED DATA
RECEIVED DATA ENABLING
RECEIVED CLOCK
RECEIVED DATA DISABLING
22
REPEATER CONTROLLER
23
VIRUS PROCESSING SECTION

Fig. 4

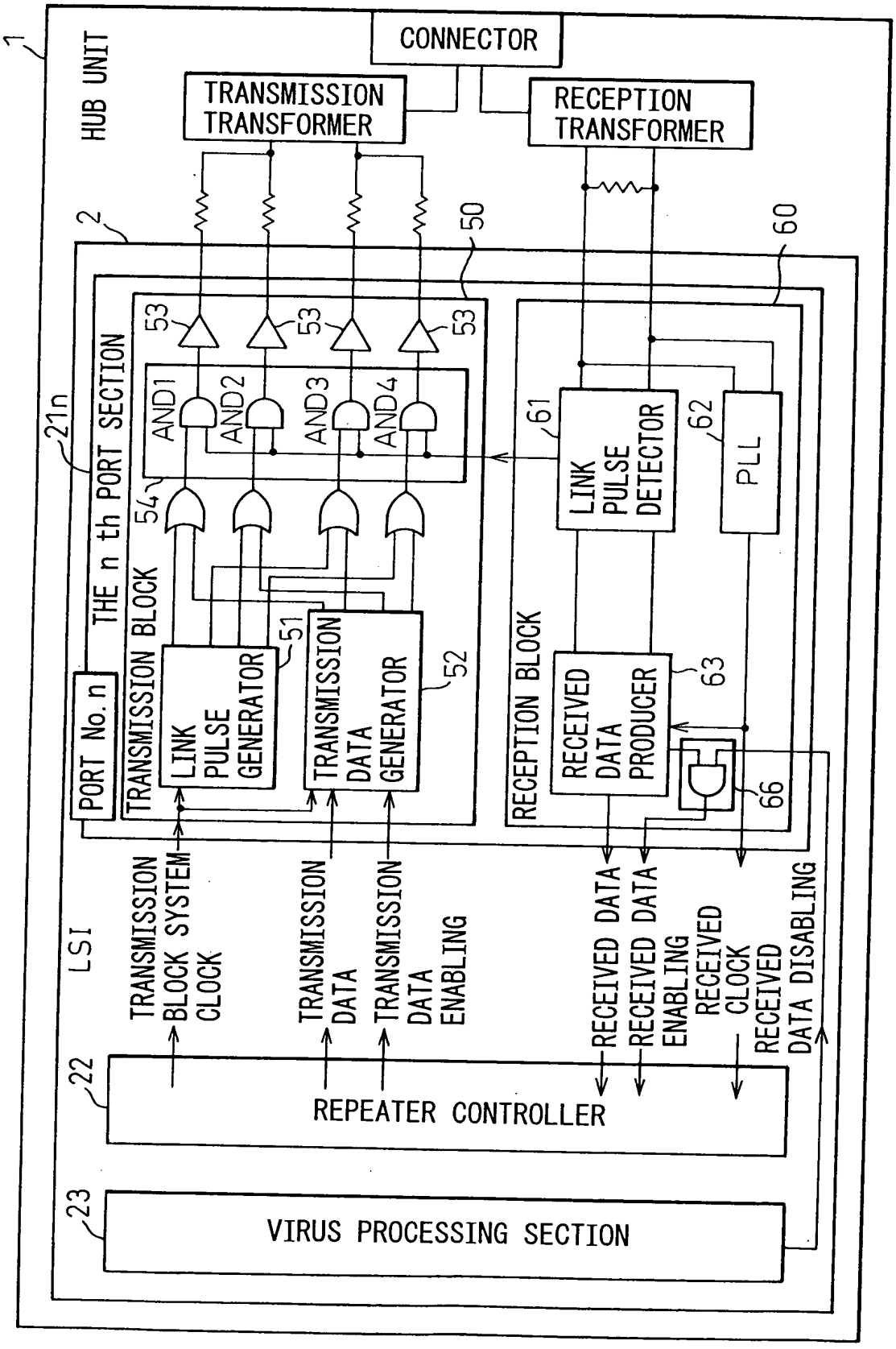

1
HUB UNIT
CONNECTOR
TRANSMISSION TRANSFORMER
RECEPTION TRANSFORMER
2
50
60
53
53
53
21n
THE n th PORT SECTION
AND1
AND2
AND3
AND4
54
61
LINK PULSE DETECTOR
62
PLL
PORT No. n
TRANSMISSION BLOCK
LINK PULSE GENERATOR
51
TRANSMISSION DATA GENERATOR
52
RECEPTION BLOCK
RECEIVED DATA PRODUCER
63
66
LSI
TRANSMISSION BLOCK SYSTEM CLOCK
TRANSMISSION DATA
TRANSMISSION DATA ENABLING
RECEIVED DATA
RECEIVED DATA ENABLING
RECEIVED CLOCK
RECEIVED DATA DISABLING
22
REPEATER CONTROLLER
23
VIRUS PROCESSING SECTION

Fig.5

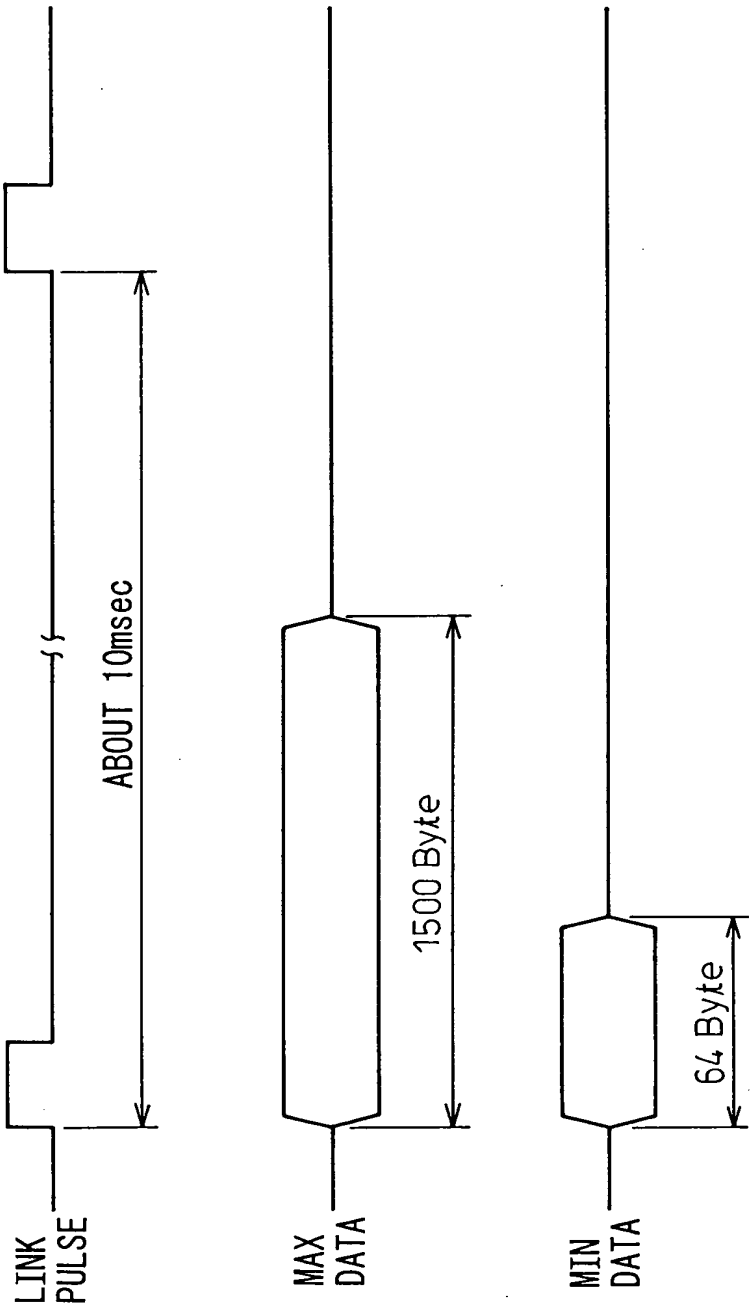

100ns
ABOUT 10msec
100ns
LINK PULSE
1500 Byte
MAX DATA
64 Byte
MIN DATA

Fig. 6

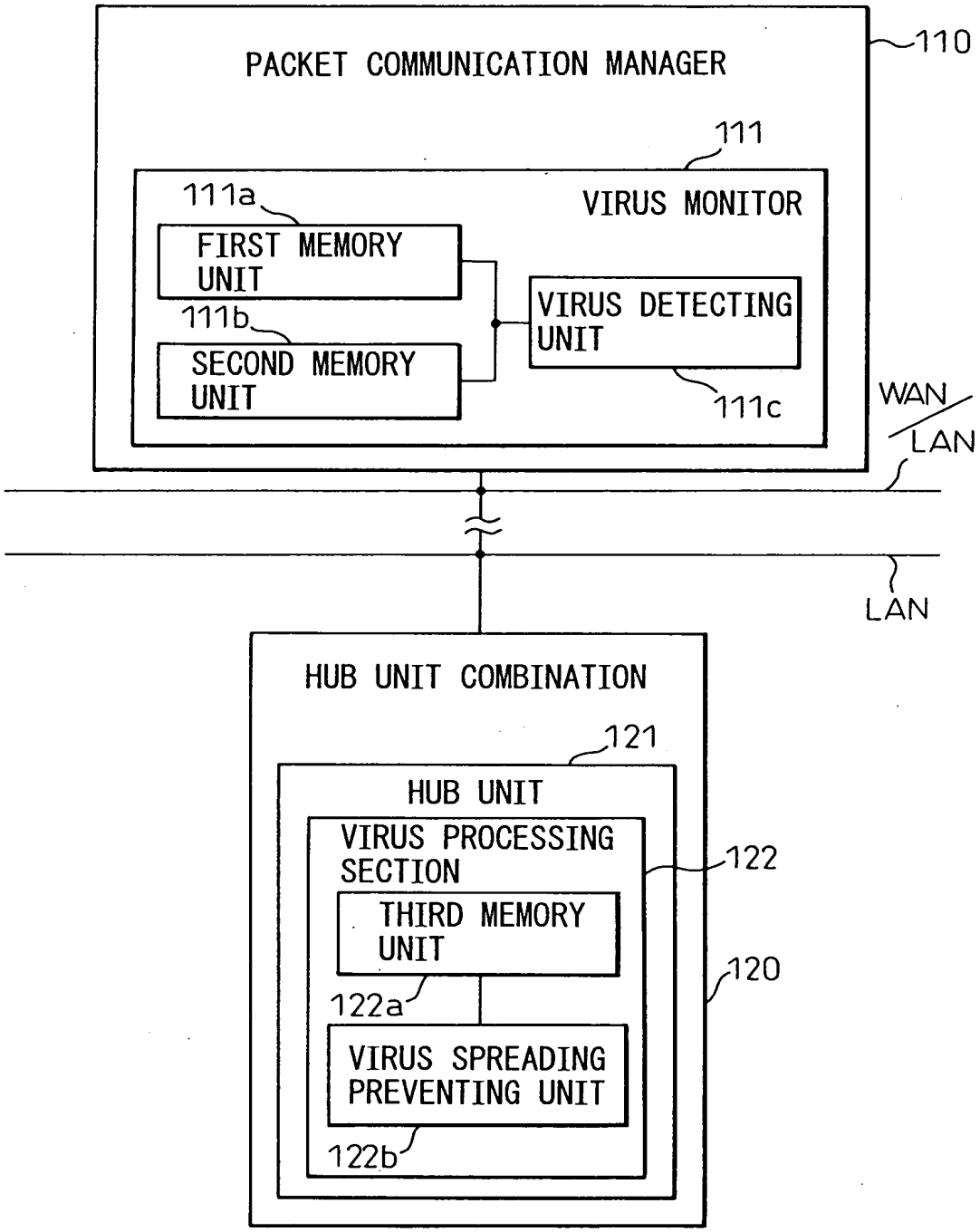
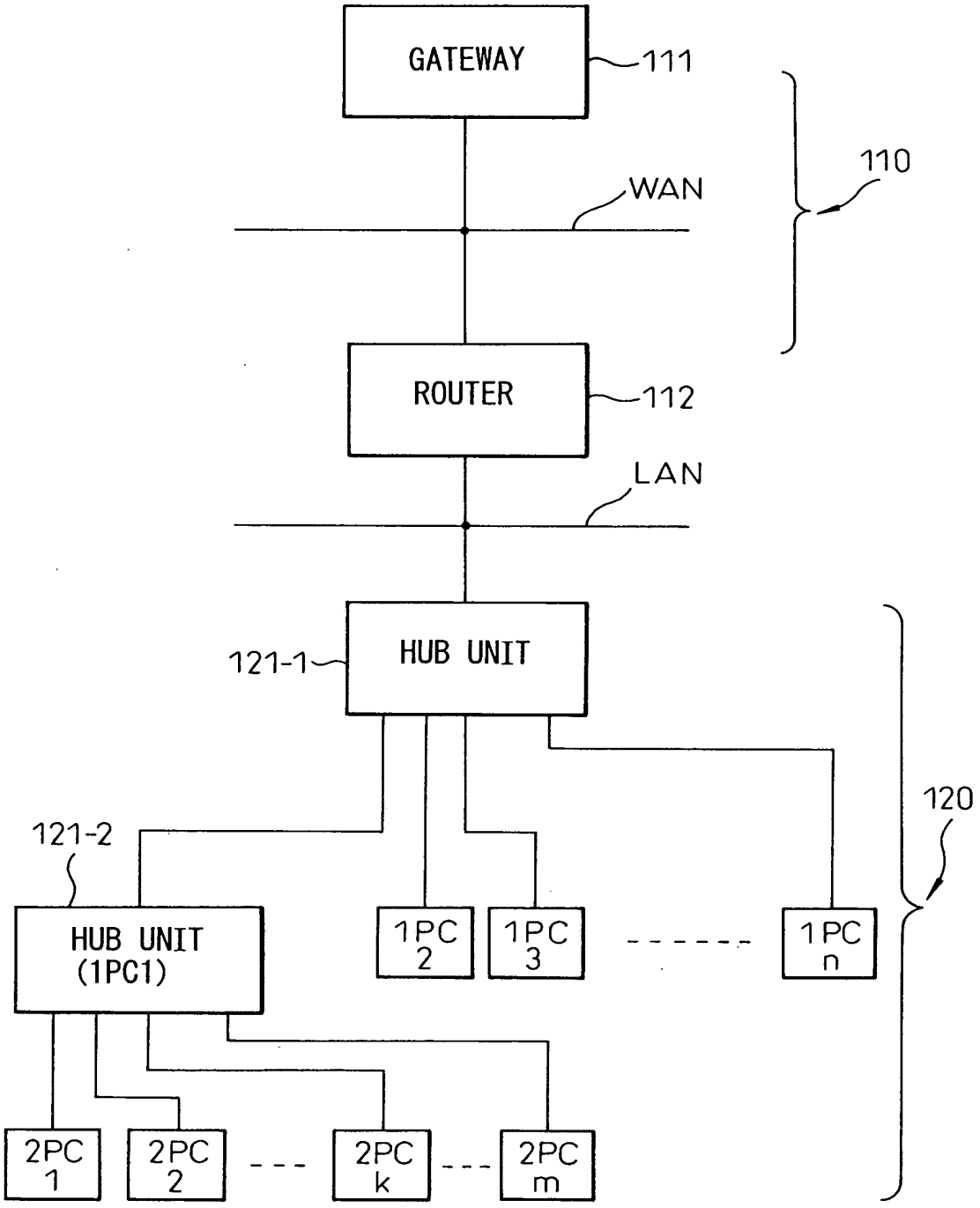

PACKET COMMUNICATION MANAGER
110
111
VIRUS MONITOR
111a
FIRST MEMORY UNIT
111b
SECOND MEMORY UNIT
VIRUS DETECTING UNIT
111c
WAN
LAN
LAN
HUB UNIT COMBINATION
121
HUB UNIT
VIRUS PROCESSING SECTION
122
THIRD MEMORY UNIT
122a
120
VIRUS SPREADING PREVENTING UNIT
122b

Fig. 7


GATEWAY
111
110
WAN
ROUTER
112
LAN
121-1
HUB UNIT
120
121-2
HUB UNIT
(1PC1)
1PC
2
1PC
3
1PC
n
2PC
1
2PC
2
2PC
k
2PC
m